

**APRIL/MAY 2024**

**CCA21/FCA21/CCS21 — C++ AND DATA  
STRUCTURES**

**Time : Three hours**

**Maximum : 75 marks**

**SECTION A — (10 × 2 = 20 marks)**

**Answer ALL questions.**

1. Define token.
2. Define the term identifiers.
3. List any two rules for operator overloading.
4. Define inheritance.
5. Write the acronym of ADT.
6. List the advantage of queue.
7. Define tree traversal.
8. Write the benefits of binary search tree.
9. Define insertion sort.
10. What is sorting?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write short note on user defined data types.

Or

- (b) Discuss the basics of control structure.

12. (a) Elucidate the pointers to objects.

Or

- (b) Describe the file opening and closing.

13. (a) Explicate the various operations on stacks.

Or

- (b) Describe the implementation of queue using array.

14. (a) Briefly explain the benefits of recursive functions.

Or

- (b) Expound the depth first search algorithm.

15. (a) Write short note on heap sort.

Or

- (b) Explain the linear search algorithm.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the basic concepts of object oriented programming.

17. Explain with example the type conversion in detail.

18. Discuss about the double linked list with an example.

19. Explain Dijkstras shortest path algorithm in detail.

20. Explain with example the bubble sort.